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ADDENDUM NO. 06

date: April 18, 2017

project: Rosemary Recreational Complex Contract ID: # 17PFC-131B
Needham, MA

to: Plan Holders

prepared by: Bargmann Hendrie + Archetype, Inc.
9 Channel Center Street, Suite 300
Boston, MA 02210

This Addendum forms part of the Contract Documents and modifies the original Bidding Documents dated March 15, 2017, Addendum 1 dated March 31, 2017, Addendum 2 dated April 3, 2017, Addendum 3 dated April 4, 2017, Addendum 4 dated April 13, 2017 and Addendum 5 Revised April 14, 2017.

Acknowledge receipt of this Addendum in the space provided in the appropriate space on the Form for General Bid and Form for Sub-Bid. Failure to do so will subject the Bidder to disqualification.

This Addendum consists of five pages (1).

INFORMATION AVAILABLE TO ALL BIDDERS

Specifications:
131413 Swimming Pool and Spray Deck Water Features

19 Pages

END OF ADDENDUM 06

SECTION 13 14 13 – SWIMMING POOL WATER FEATURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Work to be done under this Section is shown on the Drawings and includes:
 - 1. Water-features in the Family Pool
 - 2. Water Features in the Spray Park
 - 3. Water Slide Flume in Family Pool
- B. **Water Source:**
 - 1. **Pool: Coordinate with Section 131110. Water is drawn through indirect suction from the pool, to the pump specified in 131110, and returned to the water features.**
 - 2. **Spray Deck: Water is provided through a domestic water connection piped to the spray deck by others. Provide a control manifold to adjust flow as well as activator controls located in a recessed flush deck box.**
- C. Work of this section requires the design and engineering of these features. The pump for the features shall be located within the filter room. Provide individual control of each feature to allow the Owner to shut-off any or all features if necessary. Coordinate with requirements of Section 131110 for pumps and piping design.
- D. Related Work:
 - 1. 131100- General Provisions for Swimming Pools
 - 2. 131110 –Swimming Pool Recirculation and Filtration Equipment
 - 3. 131113 – Swimming Pool Construction
 - 4. 131113.1- Spray Deck Construction
 - 5. 131146- Swimming Pool Deck Equipment
 - 6. Section 260000- Electrical For bonding of pool water features.

1.3 ALTERNATE WORK

- A. **Alternate Work is required for this Section as specified in Section 12300- Alternates**

1.4 SUBMITTALS

- A. Product Data:
 - 1. Materials list for items proposed to be provided under this Section.

2. Manufacturer's specifications, copies of guarantees and other data needed to prove compliance with the specified requirements.
 3. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the work.
- B. Shop drawings in sufficient detail to show design criteria, fabrication, installation, anchorage, and the interference of the work of this Section with the work of adjacent trades.
1. Shop Drawings of slide shall be stamped by an Engineer certifying the structural integrity of a properly installed assembly.
- C. Samples: Color Charts or paint chips for color selection.

1.5 QUALITY ASSURANCE

- A. Water Feature Manufacturer shall be regularly engaged in the design, fabrication, and installation of water features.

1.6 PROJECT CONDITIONS

- A. All slides must be delivered to the user-installer with a set of detailed installation instructions, a complete parts list, and a simple assembly diagram showing the slides in their assembled configuration and the positions and dimensions of all major parts

PART 2 - PRODUCTS

2.1 PRODUCTS GENERAL

- A. Product Options: Accessory requirements, including those for materials, finishes, dimensions, capacities, and performance, are established by specific products indicated.
- B. Products of other manufacturers listed in Part 2 with equal characteristics, as judged solely by Architect, may be provided.

2.2 WATER FEATURES- SWIMMING POOL

- A. Basis of Design: The specified features shall be suitable for installation in public and semi-public swimming facilities and shall be the Rain Drop Fountain manufactured by Sonar International, 2001 S Street N.W., Suite 250, Washington DC 20009, telephone 800/343-6063,
- B. Provide all pumps, piping, electrical connections, and appurtenances required for a complete installation.
- C. **POP JETS – WATERFEATURE NO. F1**
1. **Pop jets are fully concealed in the pool floor. Seven openings are visible in the pool floor, which will eject “pop” water.**

2. **Standard Pop Jets feature.** Shall operate at a flow rate of 63 GPM at 7'- 0" Total Dynamic Head ("TDH").
3. **Construction:** The body shall be manufactured from heavy duty, high tensile strength Schedule 80 PVC, gas welded and shall be impervious to rust and corrosion. The nozzle shall be high strength, corrosion resistant HDPE.
4. **Piping/Stem:** All piping connection shall be made from heavy-duty high tensile strength PVC.
5. **Provide all components necessary for a complete assembly.**

D. DROP JET – WATERFEATURE NO. F2

1. **The Drop Jet shall be as manufactured by Sonar International, 2001 S Street N.W., Suite 250, Washington DC, 20009, Tel.: 800/343-6063.**
2. **Standard Drop Jet feature.** Shall operate at a flow rate of 41 GPM
3. **Construction:** the stem and the branch shall be supplied in two pieces so that either piece can be individually replaced should damage or vandalism occur. All materials shall be inert to pool chemicals.
4. **Stem and Branch:** shall be rigid corrosion proof, PVC material with a refrigerator white finish. Attachment flanges shall provide twelve 3/4 inch bolt holes on a 17 inch bolt pattern to integrate with stainless steel bolt circle unit for mounting to stem and branches and shall have a similar bolt pattern at the base of the stem.
5. **Gaskets:** shall be neoprene closed cell material, 1/2 inch thick to allow minimal field adjustments for leveling.
6. **Fasteners:** shall be type 304 stainless steel for all anchor bolts, fasteners and bolt ring. Anchor bolts for mounting to foundation shall be thunderstud expansion type anchor bolts.
7. **Base Skirt:** shall be fiberglass reinforced plastic, white in color, made in two pieces for easy assembly.
8. **Provide all components necessary for a complete assembly.**

E. PIPE SHOWER- WATER FEATURE NO. F3

1. **The Pipe Shower shall be as manufactured by Sonar International, 2001 S Street N.W., Suite 250, Washington DC, 20009, Tel.: 800/343-6063.**
2. **Standard Drop Jet feature.** Shall operate at a flow rate of 61 GPM
3. **Construction:** the stem and the branch shall be supplied in two pieces so that either piece can be individually replaced should damage or vandalism occur. All materials shall be inert to pool chemicals.
4. **Stem:** shall be rigid corrosion proof, PVC material with a refrigerator white finish.
5. **Control:** Provide "FunFlow" valve for user water flow control.
6. **Gaskets:** shall be neoprene closed cell material, 1/2 inch thick to allow minimal field adjustments for leveling.
7. **Fasteners:** shall be type 304 stainless steel for all anchor bolts, fasteners and bolt ring. Anchor bolts for mounting to foundation shall be thunderstud expansion type anchor bolts.
8. **Base Skirt:** shall be fiberglass reinforced plastic, white in color, made in two pieces for easy assembly.
9. **Provide all components necessary for a complete assembly.**

F. RAIN DROP –WATERFEATURE NO.F4

1. **Construction:** the stem and the umbrella shall be fully assembled in two pieces so that either piece can be individually replaced should damage or vandalism occur. All materials shall be inert to pool chemicals.

Umbrella: shall be a smooth finish of fiberglass reinforced plastic with a high gloss In-Mold Coating (IMC) on the exterior and a soft glow white IMC finish on the underside. Colors are to be obtained with color impregnated IMC, which is to be ultraviolet stabilized to prevent fading. IMC shall be Armorcote as manufactured by Cook Composites and Polymers. Gelcoats and colored paints over fiberglass material are not acceptable and shall not be used.

Stem: shall be rigid corrosion proof, filament wound fiber reinforced plastic material with a refrigerator white textured IMC finish. Attachment flanges shall provide twelve 3/4 inch bolt holes on a 17 inch bolt pattern to integrate with stainless steel bolt circle unit for mounting to umbrella and shall have a similar bolt pattern at the base of the stem. PVC is not acceptable and shall not be used for stems.

2. **Gaskets:** shall be neoprene closed cell material, 2 inch thick to allow minimal field adjustments for leveling
3. **Fasteners:** shall be type 304 stainless steel for all anchor bolts, fasteners and bolt ring. Anchor bolts for mounting to foundation shall be thunderstud expansion type anchor bolts
4. **Base Skirt:** shall be fiberglass reinforced plastic, white in color, made in two pieces for easy assembly
5. **Colors:** Shall be available from manufacturers color charts with special colors or special corporate logo designs available upon request

G. TRIPLE FAN JET –WATERFEATURE NO.F5

1. **Slant Fingers** are fully concealed in the pool deck. Opening will provide a three horizontal arching sprays with a 6 ft. area of influence
2. **Flow** is 11.4 gpm

H. OMNI-POD WITH BLANK FLUSH FLOOR PLATE FOR FUTURE FEATURE NO.F6

2.3 WATER FEATURES- SPRAY PARK

- A. **Basis of Design:** The specified features shall be suitable for installation in public and semi-public swimming facilities and shall be the Rain Drop Fountain manufactured by Sonar International, 2001 S Street N.W., Suite 250, Washington DC 20009, telephone 800/343-6063,
- B. Provide all pumps, piping, electrical connections, and appurtenances required for a complete installation.
- C. **SLANT FINGER – WATER FEATURE A**
- D. **TINY TOOLIP- WATERFEATURE NO. B**
- E. **UPSTREAM JET- WATERFEATURE NO. C**
- F. **MINI POPKORN JETS – WATERFEATURE NO. D**
 1. Pop jets are fully concealed in the pool floor. Seven openings are visible in the pool floor, which will eject “pop” water 6 to 10 inches above the water level.
 2. Standard Mini Popkorn Jet feature with OMNIPOD® adapter. Shall operate at a flow rate of 14 GPM at 3’- 0” Total Dynamic Head (“TDH”).

3. Construction: The body shall be manufactured from heavy duty, high tensile strength Schedule 80 PVC, gas welded and shall be impervious to rust and corrosion. The nozzle shall be high strength, corrosion resistant HDPE.
4. Piping/Stem: All piping connection shall be made from heavy-duty high tensile strength PVC.
5. Provide all components necessary for a complete assembly.

G. CIRCLE TIME- WATERFEATURE NO.E

2.4 ACTUATOR F7 ON DRAWINGS

- A. **At Main Pool, provide actuator for the following:**
 1. **Feature F1, Pop Jets**
 2. **Feature f5, Fan Jets**
- B. **At Spray Deck Provide Actuator to control single valve controlling all of the water features.**
- C. The specified feature shall be suitable for installation in SprayGrounds® and shall be manufactured by Rain Drop Products. The supplier shall furnish bollard complete with all anchoring and fastening devices, required gaskets and base skirt. Installation shall be supplied by others.
- D. Construction: the feature shall be manufactured from rigid fiberglass and other materials inert to pool chemicals. Where metal or steel is supplied as part of the feature all such parts shall be either 304 stainless steel, brass or corrosion protected.
- E. Piping/Stem: shall be rigid corrosion proof and shall consist of an 8-inch diameter, rigid fiberglass bollard with a high gloss finish housing an infrared sensor. Attachment flange shall provide 3/4 inch bolt holes on a 11.5 inch bolt pattern. PVC is not acceptable and shall not be used.
- F. Structural Piping Strength:
 1. Tensile Strength (Longitudinal) = 110,000 psi;
 2. Compressive Strength (Longitudinal) = 50,000 psi;
 3. Compressive Strength
 4. (Circumferential) = 26,000 psi.
- G. Fasteners: shall be type 304 stainless steel for all anchor bolts, fasteners and bolt ring. Anchor bolts for mounting to foundation shall be expansion type anchor bolts.
- H. Base Skirt: shall be ABS molded plastic made in two piece construction to rigidly attach to stem.
- I. Colors: shall be available from manufacturers color charts or with special colors upon request. Colors are ultraviolet stabilized to inhibit fading.

- J. Activator: The Activator is an infrared sensor protected by a lexan face plate. The sensor senses the presence of a person and sends a signal to the CPU to activate the systems software program. The program stays on for approximately 12 minutes before it needs to be re-activated.
- K. Wiring: Bollard Activator operates on 24 VAC current and is hard wired to the CPU. It is designed to turn off when the program is not reactivated by movement on the SprayGround. The sensor has a safety override built into it to prevent an individual from trying to bypass it by covering it with an object in order to keep the SprayGround CPU running constantly.

2.5 BASIS OF DESIGN: BASE BID: CUSTOM COMBO SLIDE TYPE S1

- A. **OUTDOOR WATER SLIDE**
 - 1. Specified Basis of Design: Natural Structures Model # 1830/1815M/32, North Star Series as manufactured by Natural Structures, PO Box 270, Baker City, OR 97814, 1-800-252-8475.
 - 2. Refer to drawings included at the end of this Section.
- B. Slides manufactured by Avalanche Waterslides are acceptable for the Work. www.avalanchewaterslide.com.

2.6 GENERAL SPECIFICATIONS

- A. Supply a Thirty Two (32") inch "ID" Enclosed fiberglass tube double flume water slide with two deck platforms, thirty six (36") inch wide access stairs and intermediate platforms and landings.
- B. Approximate Slide ride run; large flume 128'-11", small flume 39'-9"
- C. Approximate Tower platform sizes; lower platform shall be 14' x 6' rectangle with 6'-5" elevation and upper platform shall be 6' x 8' with 16'-4" elevation.
- D. All construction shall be absent of protrusions, extensions, and means of entanglement or other obstructions that can cause entrapment or injury.
- E. All posts, walls, guardrails, flume plates, and flume leg supports, shall be mild steel.
- F. Post Baseplates shall be stainless steel.
- G. Flat bar steel grade A36.
- H. Pipe is steel grade 53 or A120.
- I. Tubing is grade A500.
- J. Metal coatings and finishes are detailed below.

2.7 POSTS

- A. Tower posts are a minimum 3/16" x 6" x 6" square steel with welded tabs and end caps.**
- B. Main Flume posts are minimum 1/4" wall by 14" round steel with welded flume support arm plates, tabs and end caps. Base plates are 3/8" x 10" x 10" stainless steel or larger.**
- C. Surface mount single flume seam support posts are 2-3/8" or 4-1/2" OD Pipe, and adjustable for sloped pool deck.**

2.8 SLIDE FLUMES

- A. Slide flume shall be fiberglass with UV stabilized gel coat on the inside and outside. Flume thickness is to be minimum 1/4" thick, 32 oz. PSF fiberglass**
- B. Fiberglass to meet or exceed ASTM D-638-80, ASTM D-790-80 and ASTM D-696-80.**
- C. Gel Coat minimum 18 to 25 mil. thick gel coat on sliding surface with 10 to 14 mil thick undercoating.**
- D. Gel coat to meet or exceed ASTM 638-80, ASTM 2538-75.**
- E. Top half of slide flume to be translucent fiberglass.**
- F. Slide seams are to water tight and sealed with neoprene gaskets not caulking.**
- G. Gel coat colors selected by owner from manufactures standards.**

2.9 SLIDE SUPPORTS

- A. Support Arm shall be 4" x 4" x 1/8" square tube with a 1 5/8" OD schedule 40 pipe brace secured with three 3/4" stainless steel hex bolts..**
- B. Flume support saddle shall be 1/4" thick x 18" long curved plate secured with 3/8" stainless steel bolts, flat washers, lock nut on a 5" or less spacing. It is secured to the support arm with 3/4" stainless steel bolts.**

2.10 HARDWARE FASTENERS

- A. Flume seam fasteners shall be 3/8" x 1 1/2" x 2", #304 stainless steel hex bolts, washer and lock nuts.**
- B. Anchor bolts shall be 1/2" x 3 3/4" concrete wedge anchor or 5/8" and up to 1 1/2" stainless steel epoxy anchor bolts with various lengths as required by the engineer.**

- C. All tower and stair hardware shall be stainless steel except where structural integrity requires a galvanized bolt, nut and lock washer (A307). All 3/8" stainless steel bolts to have a minimum yield of 30,000 psi and a tensile strength of 90,000 psi.

2.11 STAIRS

- A. Stairs shall be thirty six (36) inches in width and have seven (7) inch maximum risers and eleven (11) inch minimum treads.
- B. Stair risers shall be closed in accordance with 1997 UBC
- C. Stairs shall be manufactured from .100 5052-H32 aluminum sheet.
- D. Stair side channels shall be 1/4" x 1 - 11/16" x 6 - 11/16" 5051 aluminum angle.
- E. Stairs shall have minimum 42" guardrails.
- F. Stair guardrails shall be 1.31" OD steel pipe with 5/8" 16 gauge uprights.
- G. Stair and tower rungs shall be spaced for a 4" or less opening.
- H. Stair treads shall be embossed with dimples for non-slip safety surface.
- I. Stair treads finish shall be textured non-slip safety surface.
- J. Stair tread ends shall be slotted for drainage with additional drain holes in center of stairway.
- K. Stairways are to be a fully welded units for simple bolt together field assembly.

2.12 VERTICAL STEEL RAILINGS

- A. Shall be made from 5/8" OD 16 gauge uprights welded to 1 5/8" OD x 0.093" wall.
- B. Rungs shall be spaced for a 4" or less opening.
- C. Railings shall be minimum of 42" high for all platforms and landings.

2.13 I. DECKS

- A. Deck platform shall be fabricated of 1/8" 5052-H32 aluminum plate formed into planks 10 - 5/8" wide by 3" tall.
- B. Planks shall be embossed with dimples for non-slip safety surface.
- C. Planks finish shall be textured non-slip safety surface
- D. Planks shall be secured to a "Z" member angle steel frame.

2.14 J. FINISHES

- A. All Mild steel components shall be hot dipped galvanized with a two stage powder coat finish. Includes colored super durable polyester powder coat topcoat over a chemical resistant Aqua-Kote undercoat. Total powder coating thickness shall be minimum of approximately 8 mils thick.**
- B. Stainless steel bottom legs shall be colored super durable polyester powder coat with total coating thickness of approximately 5 mils thick.**
- C. Walking Surfaces consisting of stairs treads, landing treads, & tower treads shall be textured Aqua-Plast thermoplastic coating designed for maximum mechanical performance, impact resistance and ultra violet (UV) stability. Minimum coating thickness of approximately 20 mils.**
- D. Colors to be selected by owner from manufactures standards. Note not all standard colors are available as super durable powder coat.**

2.15 START PAN & WATER SUPPLY RECOMMENDATION

- A. The start pan shall be formed fiberglass and shall have a sit down deck at the back of the tub.**
- B. The start pan shall be a 32" wide diameter tub.**
- C. Start pan shall have a two 6" pipe couplings for water inlet.**
- D. Start pan shall be deck platform mounted.**
- E. Slide entrance water supply requirement shall be 500 GPM for small flume and 700 GPM for large flume.**

2.16 FOOTINGS

- A. Tower and stair posts shall be secured with concrete wedge anchors or 5/8: and up to 1 ½" stainless steel rod with varying lengths as required by the engineer.**
- B. Epoxy shall be Simpson "Set" 22.**
- C. Slide posts shall be secured to a concrete footing, as shown on the installation documents.**
- D. Footing requirements may vary due to soil compaction and deck integrity.**
- E. BONDING/GROUNDING**
- F. Slide Manufacture to provide bonding/ground lug attachment point into contiguous metal structure. Separated metal components shall be provided with bonding/ground lug attachment allowing for contiguous grounding.**

2.17 WARRANTY

- A. 1. Provide manufacturers standard 3 year warranty against defects for all equipment and components.**

2.18 ALTERNATE DESIG: SINGLE SLIDE TYPE S2.

- A. General: The specified slide shall be suitable for installation in public swimming facilities and shall Natural Structures, Inc. Model 1648 double flume slide. Refer to drawings attached to the end of this Section.**
- B. Slides manufactured by Avalanche Waterslides are acceptable for the Work.**
www.avalanchewaterslide.com.

PART 3 - EXECUTION

- A. The Swimming Pool Contractor shall examine all work prepared by others which is to receive the work of this Section and shall report any noted defects effecting this work of this Section to the Architect.**

3.2 COORDINATION

- A. Coordinate the Work of this Section with:**
- 1. 131100- General Provisions for Swimming Pools**
 - 2. 131110 –Swimming Pool Recirculation and Filtration Equipment**
 - 3. 131113 – Swimming Pool Construction**
 - 4. 131113.1- Spray Deck Construction**
 - 5. 131146- Swimming Pool Deck Equipment**
 - 6. Section 260000- Electrical For bonding of pool water features.**

3.3 INSTALLING EQUIPMENT

- A. For equipment specified in this Section, install in strict accordance with the manufacturer's recommendations, anchoring firmly into position.**
- B. Mounting shall allow the component to be installed in existing or new (cured) concrete with stainless steel anchor wedges and without the need for mounting fixtures which are embedded in concrete at the time of pouring**
- C. Schedule installation to ensure that utility connections are achieved in an orderly and expeditious manner.**
- D. Verify that each item is properly installed and properly operating. Make required adjustments to achieve optimum operation.**
- E. Install equipment plumb, square, and straight, without distortion; securely anchor.**

- F. All metal components shall be bonded according to the NEC and Massachusetts Electrical Code as specified in Section 260000.

3.4 ADJUSTING AND CLEANING

- A. Touch up minor damaged surfaces caused by installation. Replace damaged components as directed by Architect.

3.5 PROTECTION

- A. Provide protective measures to prevent equipment and surfaces from damage by other construction activity.

PART 4 - DRAWINGS

- 4.1 Attached are drawings of Slide Type S1 and Alternate Slide S2.

END OF SECTION 131413

Natural Structures

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Baker City, OR 97814
Phone: (541) 523-0224
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1830/1815M
Rosemary Recreation Complex
Needham, MA
BH+A Project No. 3255

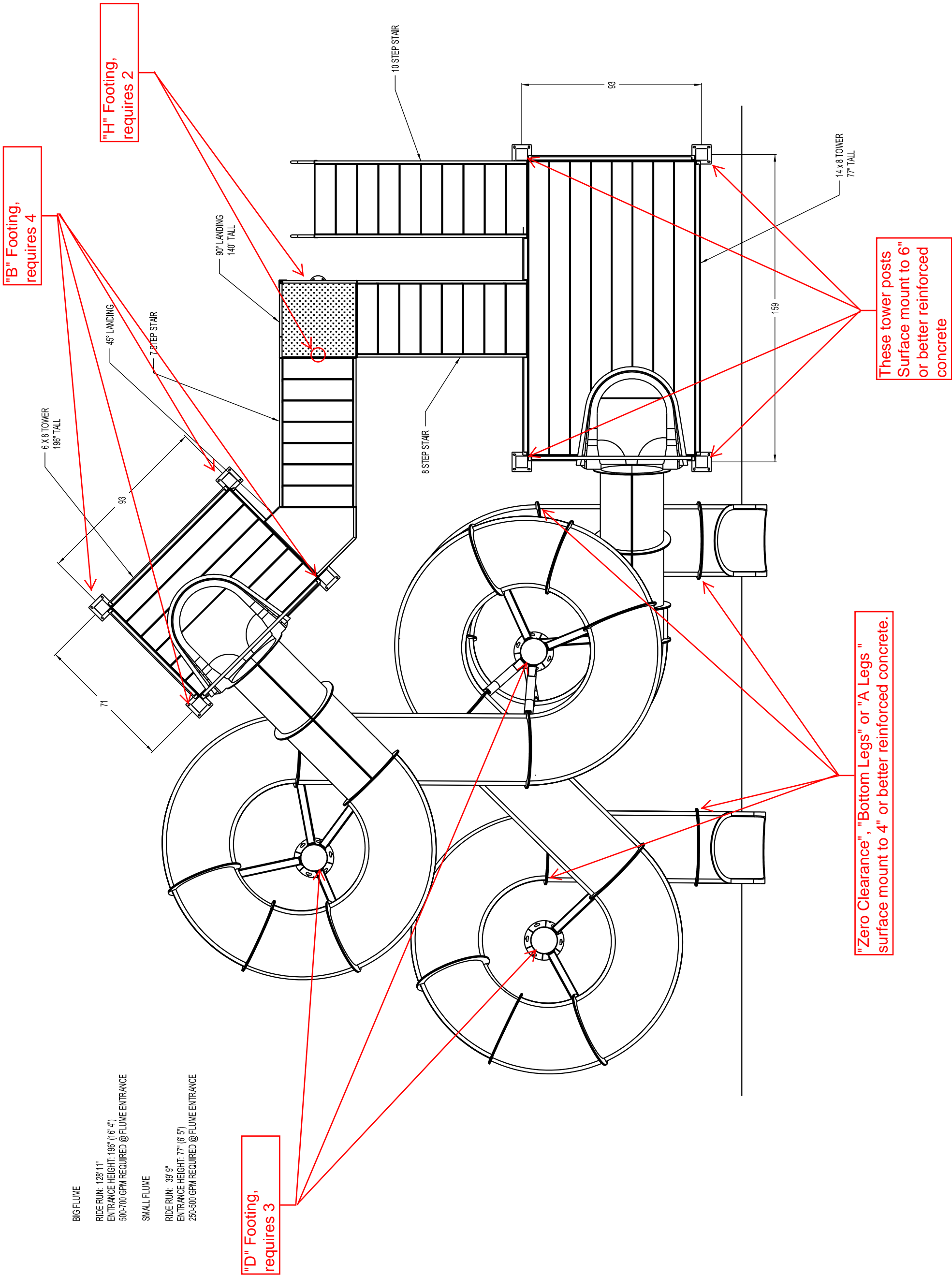
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REVIEWED BY: TB
DATE: 03/30/2017
ANSI SHEET SIZE: B

REVISION / DATE
ADDED GPM (04/04/17 M.C.)

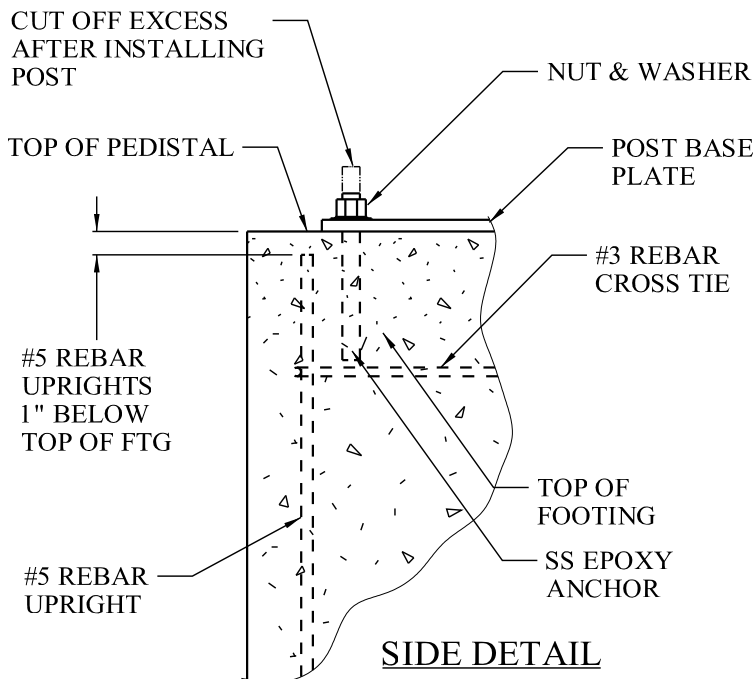
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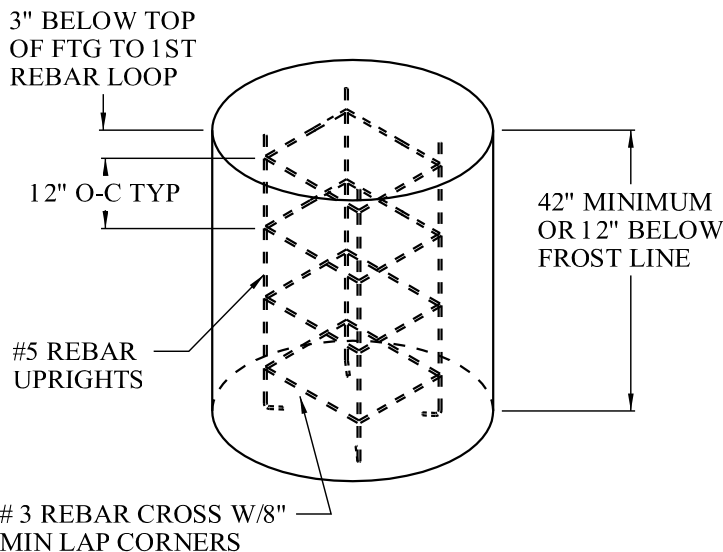
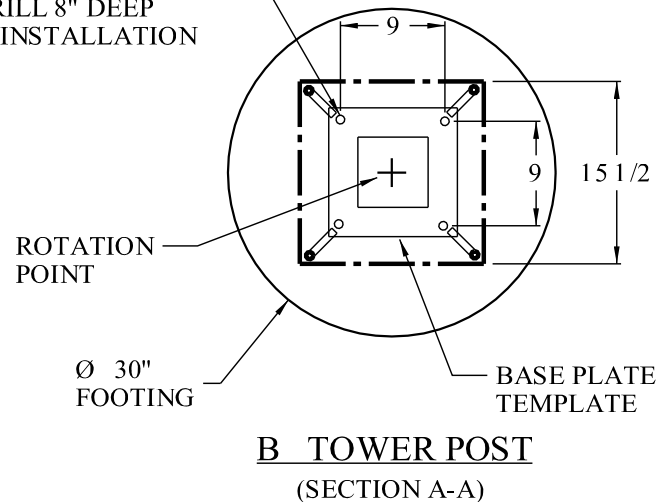
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REBAR LAYOUTS



5/8"-UNC X 10" SS EPOXY ANCHORS; DRILL 8" DEEP @ INSTALLATION



17.2 CU FT CONCRETE REQUIRED

DURING REBAR LAYOUT:

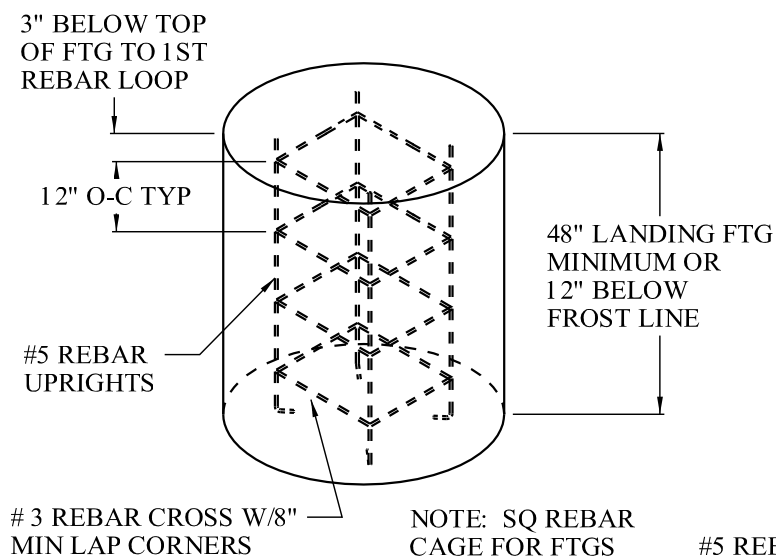
- 1) DIMENSIONS ON FOOTING LAYOUT ARE THE CENTER OF THE POST OR BOLT PATTERN.
- 2) BEFORE POURING FOOTINGS SEE ASSOCIATED "FOOTING DRAWING" FOR REBAR ORIENTATION.

DURING ANCHOR BOLT LAYOUT:

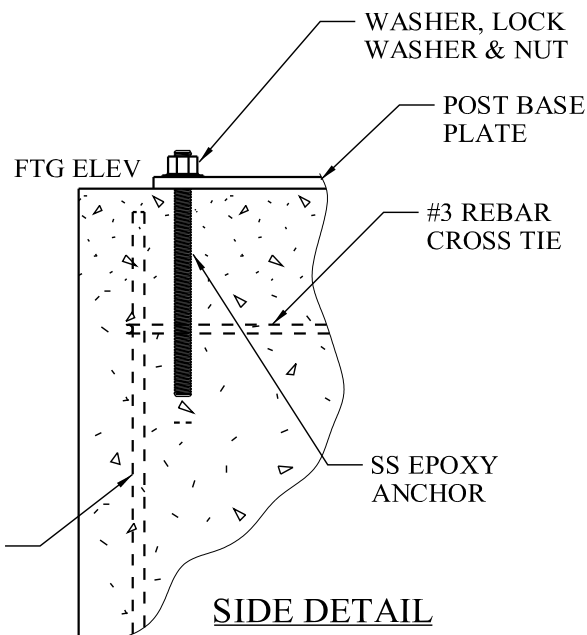
- 1) REFER TO SPECIFIC FOOTING SPEC SHEET FOR DRILLING INSTRUCTIONS AND PREPARATION FOR GLUE PROCEDURE.
- 2) USE SIMPSON "SET" EPOXY AND ALLOW ADEQUATE CURING TIME FOR CURRENT CLIMATIC CONDITIONS.

CONCRETE FOOTING 2500 PSI MIN.
SOIL BEARING STRENGTH 1500 PSF OR GREATER

"B" FOOTING EPOXY DESIGN FOR 13'-4" (160") THRU 21'-0" (252") TOWERS"



FOOTING DETAIL



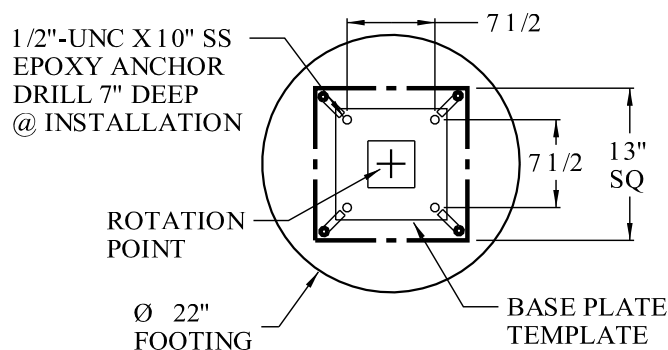
SIDE DETAIL

REBAR CAGE:

SQUARE REBAR CAGE IS SHOWN. IF ROUND CAGE IS USED, THE CAGE DIA SHOULD BE 16" TO ASSURE ADEQUATE EDGE DISTANCE AND STILL PROVIDE ANCHOR BOLT CLEARANCE.

DURING FOOTING EXCAVATION:

WHETHER THE FOOTING IS POURED SEPARATELY OR AS A MONOLITHIC POUR ALONG WITH THE DECK, THE DEPTH OF THE FOOTING IS TO BE THE SAME AS SHOWN IN THE FTG DETAIL ABOVE. NOTE THE FROST LINE NEEDS TO BE 12" ABOVE THE BOTTOM OF THE FOOTING.



H LANDING POST

DURING REBAR LAYOUT:

THE CENTER OF "H" FOOTINGS IS ALSO THE CENTER OF THE FLUME POST MOUNTED TO IT.

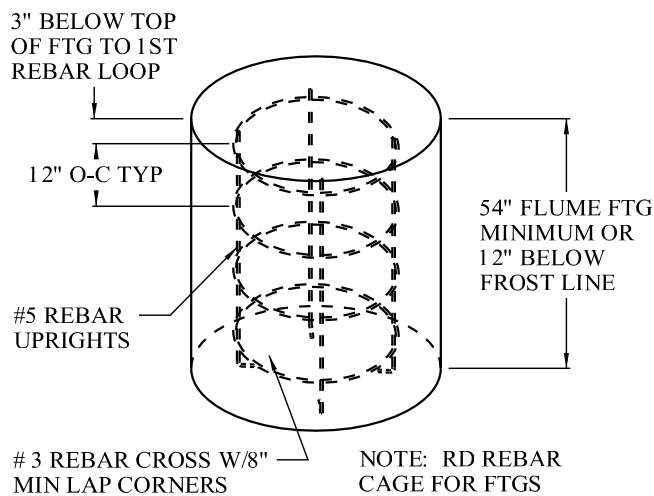
10.6 CU FT CONCRETE REQUIRED

DURING ANCHOR BOLT LAYOUT:

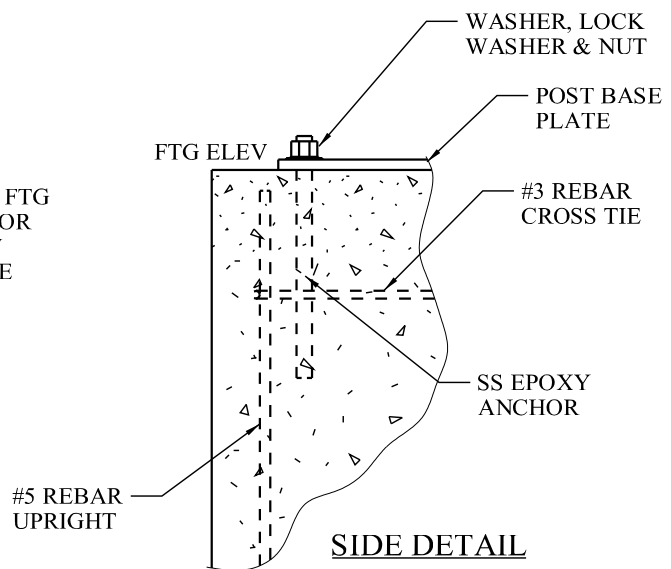
- 1) REFER TO SPECIFIC FOOTING SPEC SHEET FOR DRILLING INSTRUCTIONS AND PREPARATION FOR GLUE PROCEDURE.
- 2) USE SIMPSON "SET" EPOXY AND ALLOW ADEQUATE CURING TIME FOR CURRENT CLIMATIC CONDITIONS.

CONCRETE FOOTING TO BE 2500 PSI MINIMUM
SOIL BEARING STRENGTH 1500 PSF OR GREATER

"H" FOOTING EPOXY ANCHOR DESIGN FOR LANDING POST (10'-0" TO 21'-0")



FOOTING DETAIL



SIDE DETAIL

REBAR CAGE:

ROUND REBAR CAGE IS SHOWN. IF SQUARE CAGE IS USED, A LARGER FOOTING DIAMETER MAY BE REQ'D TO PROVIDE A MINIMUM CLEARANCE OF 2 1/2" FROM C-L OF REBAR TO EDGE AND STILL PROVIDE ANCHOR BOLT CLR.

DURING FOOTING EXCAVATION:

WHETHER THE FOOTING IS POURED SEPARATELY OR AS A MONOLITHIC POUR ALONG WITH THE DECK, THE DEPTH OF THE FOOTING IS TO BE THE SAME AS SHOWN IN THE FTG DETAIL ABOVE. NOTE THE FROST LINE NEEDS TO BE 12" ABOVE THE BOTTOM OF THE FOOTING.

DURING REBAR LAYOUT:

THE CENTER OF "D" FOOTINGS IS ALSO THE CENTER OF THE FLUME POST MOUNTED TO IT.

DURING ANCHOR BOLT LAYOUT USING SIMPSON SET 22 EPOXY:

- LAYOUT HOLES PER FOOTING LAYOUT. DRILL HOLES INTO FOOTING USING A CONCRETE DRILL WITH A 1/8" DIAMETER LARGER DRILL BIT THAN THE DIAMETER OF ANCHOR. NATURAL STRUCTURES SENDS ENOUGH EPOXY FOR THIS, IF DRILLING OVER SIZE HOLES CUSTOMER IS RESPONSIBLE FOR EXTRA EPOXY. BE SURE HOLES ARE THOROUGHLY CLEANED USING AN AIR GUN, AND THEN BRUSH THE HOLE OUT, BLOW IT OUT AGAIN (REPEAT SEVERAL TIMES).
- CHECK YOU LOCAL BUILDING CODES TO SEE IF AN INSPECTION IS REQUIRED BEFORE EPOXYING IS DONE.
- FILL HOLES APPROXIMATELY 1/3 FULL AND PUSH THE ALLTHREAD INTO HOLE. PUSH IN AND OUT TO WORK OUT AIR BUBBLES. EPOXY SHOULD COME OUT THE TOP OF THE HOLE, IF NOT THEN TAKE OUT AND PUT MORE EPOXY IN. EXCESS EPOXY WILL BE EASILY REMOVED WITH HAMMER AND CHISEL AFTER CURED. LET EPOXY CURE BEFORE INSTALLATION.
- CURE TIMES ARE AS FOLLOWS:

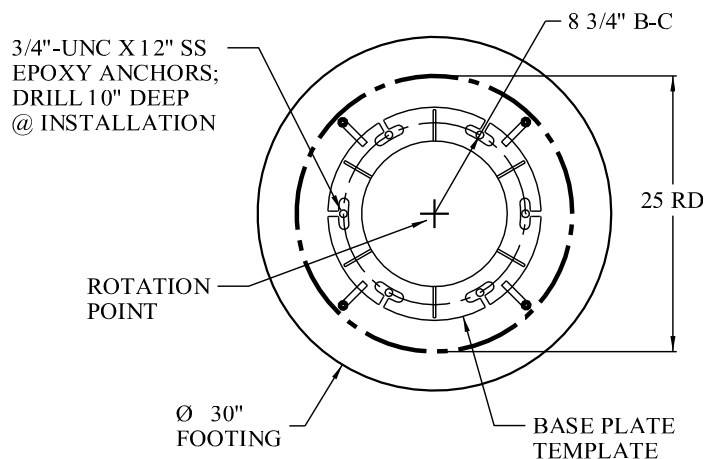
90° FAHRENHEIT OR 32° CELSIUS = 16 HOURS

85° FAHRENHEIT OR 29° CELSIUS = 20 HOURS

65° FAHRENHEIT OR 18° CELSIUS = 24 HOURS

40° FAHRENHEIT OR 4° CELSIUS = 72 HOURS

- IT IS IMPORTANT TO KEEP BASE TEMPERATURE ABOVE 40° USING HEAT BLANKETS AND A HEATER MAY BE NECESSARY AT COLDER CLIMATES.



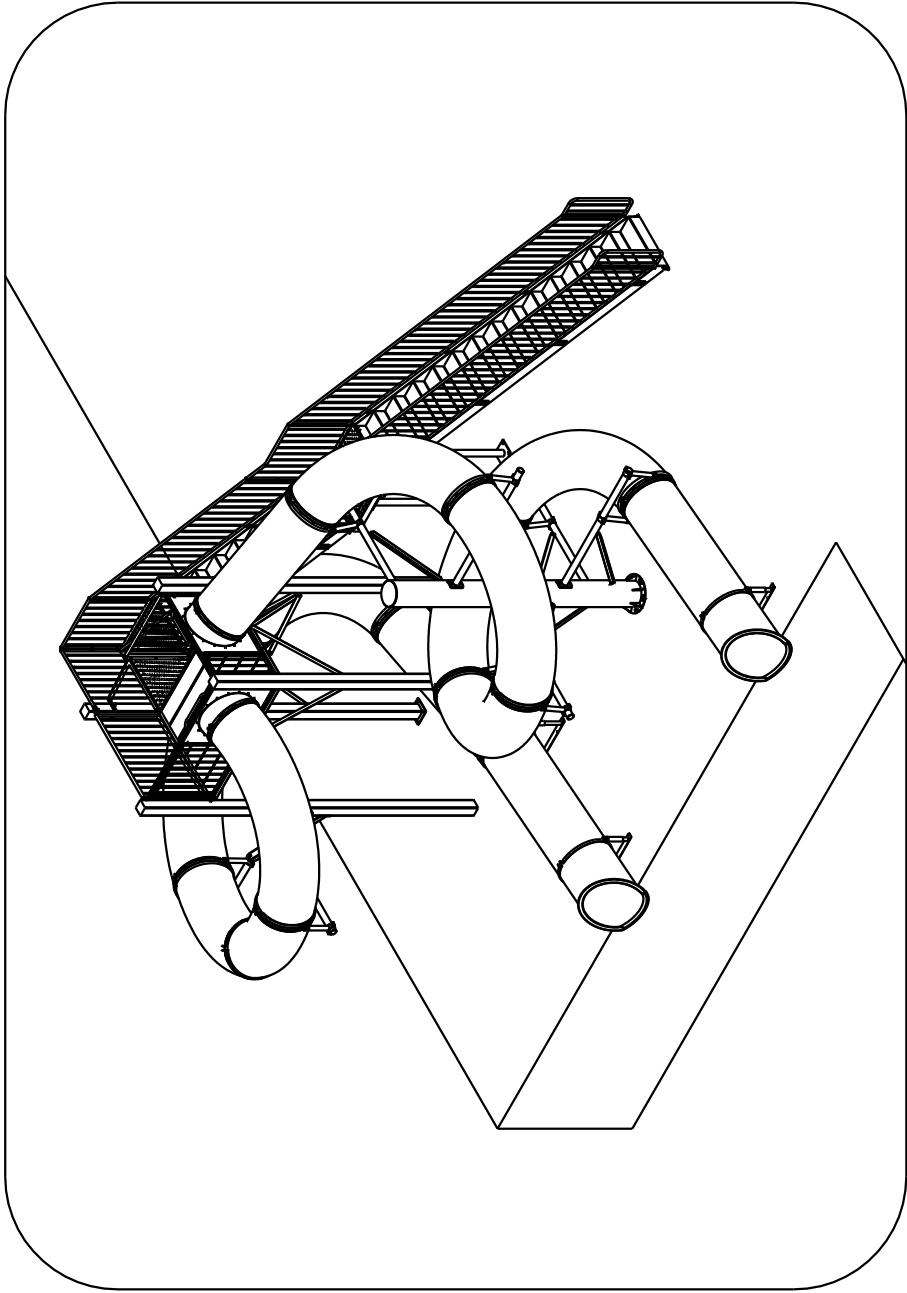
D FLUME POST

22.1 CU FT CONCRETE REQUIRED

CONCRETE FOOTING TO BE 2500 PSI MINIMUM
SOIL BEARING STRENGTH 1500 PSF OR GREATER

DESIGNED FOR FLUME AND SPIRAL
STAIR POSTS UP TO 21' TALL

"D" FOOTING EPOXY DESIGN FOR ROUND FLUME OR SPIRAL STAIR POST



MODEL:

1648M-30RH68-4C38-0736E12

SLIDE PLATFORM HEIGHT:
SPASH DOWN DIMENSIONS:
MIN. WATER DEPTH REQUIRED:
SPACE REQUIREMENTS:
STAIR CONFIGURATION:

14' 0"
27' - 10" BY 20' - 0"
3' - 0" MIN DEPTH
36' - 8 1/4" BY 24' - 5 3/4"
7" RISE / 11" RUN 36" WIDE
(1/4STEP/8 STEP) STRAIGHT LANDING @ 105°

FLUME #1
SLIDE ENTRANCE HEIGHT:
SLIDE EXIT HEIGHT:
CENTER LINE RUN:
TOTAL RUN:
AVERAGE SLOPE:
SIZE OF FLUME
GPM REQUIRED:

MODEL 1664
14' - 6"
1-1/16"
62' - 2"
69' - 10"
23.18%
30" ID CLOSED POLY
20-40

FLUME #2
SLIDE ENTRANCE HEIGHT:
SLIDE EXIT HEIGHT:
CENTER LINE RUN:
TOTAL RUN:
AVERAGE SLOPE:
SIZE OF FLUME
GPM REQUIRED:

MODEL 1610
14' - 6"
1-1/4"
63' - 10"
73' - 4"
22.55%
30" ID CLOSE
20-40

MINIMUM DESIGN CRITERIA
UNIFORM DECK LOAD:
RIDER POINT LOAD:
WIND LOAD:

80 PSF
250 LB
90 MPH

- | | |
|--|---|
| <p>1. WATER SLIDE DECK IS RECTANGULAR WITH TOWER POSTS SET AT 7'-9" X 5'-11" APART. DECK HEIGHT TO BE 168". TOP OF FOOTINGS TO BE LEVEL WITH POOL DECK ELEVATION AT EXIT OF SLIDE. POSTS ARE TO BE 6" X 6" X 3/16" TUBULAR STEEL TO CONFORM TO A-500 GRADE B STRUCTURAL STEEL TUBING OR BETTER. THE STAIRS (7' RISE, 11" RUN) PROVIDE ACCESS TO TOWER DECK FROM THE GROUND LEVEL AND ARE CONSTRUCTED OUT OF 6061-T6 ALUMINUM STAIR STRINGERS AND 5052-H32 ALUMINUM STEPS. HANDRAIL AND WALL ARE TO BE MILD STEEL OR STAINLESS STEEL DEPENDING ON WHICH OPTION THE CUSTOMER CHOOSES. WALL RAIL IS 1.66" OD SCH 40 PIPE, WHILE THE HANDRAIL IS 1.32" OD PIPE. THE WALL & HANDRAIL RUNGS ARE 5/8" OD X .065 WALL TUBING WITH LESS THAN 4" SPACING BETWEEN RUNGS.</p> <p>THE FLUME SUPPORT ARMS ARE 3-1/2" OD PIPE AND HAVE A 2 X 2 X 3/16 STRUCTURAL ANGLE KNEE BRACE. THE 30" ID SLIDE FLUME SECTIONS ARE MADE FROM COLOR IMPREGNATED POLYETHYLENE.</p> <p>TOWER POSTS HAVE TWO 2 X 2 X 3/16 STRUCTURAL ANGLE KNEE BRACES PER SIDE. ALL OF THE WELDING CONFORMS TO AWS-D1.1 & D1.2 CODE.</p>
<p>2. ALL STEEL SHALL BE POWDER COATED WITH A COLOR TBD. ANY SCRATCHED OR DAMAGED PAINT TO BE TOUCHED UP AFTER FINAL ASSEMBLY. POWDER COATING TO ADHERE TO THE FOLLOWING STANDARDS:</p> <ul style="list-style-type: none"> 1) FLEXIBILITY (ASTM D-1735) 2) IMPACT (ASTM D-3359) 3) ADHESION (ASTM D-3359) 4) HARDNESS (ASTM D-3363) 5) OVERBAKE RESISTANCE (ASTM D-2454) 6) WEATHERABILITY (ASTM D-822)
<p>3. IF PURCHASED BY CUSTOMER, A PROFESSIONAL ENGINEER CERTIFIED IN STATE WHERE ERRECTED, SHALL RUN STRUCTURAL CALCULATIONS TO GET ACTUAL LOADS FOR LOCATION, AND PROVIDE STAMPED, SIGNED AND SEALED FILE COPIES.</p>
<p>4. TOWER DECKING TO BE 1/8" THK OPEN C-SECTION CONSTRUCTION WITH WELDED IN PLACE CROSS STIFFENERS. TOP SURFACE IS EMBOSSED AND TEXTURED WITH A THERMAL PLASTIC COATING PROCEDURE THAT LEAVES A NON-SLIP SURFACE TO ENHANCE SAFETY.</p>
<p>5. INTEGRAL DECK WALLS PROVIDE A SECURE 42" HIGH BARCADE PROTECTING USER'S SAFETY. ALL WALL AND HANDRAIL RUNGS ARE SPACED LESS THAN 4" APART TO PROVIDE ADDITIONAL SAFETY FOR USERS. A GRAB BAR ABOVE THE SLIDE ENTRANCE PROVIDES A SAFE TRANSITION FROM STANDING ON THE DECK TO A SITTING POSITION AT THE TOP OF THE SLIDE.</p>
<p>6. AN INJECTOR AT THE TOP OF THE SLIDE PROVIDES FOR A WATER LUBRICANT THAT MAKES THE INSIDE OF THE SLIDE CONSISTANTLY SLICK FOR AN ENJOYABLE RIDE.</p>
<p>7. ALL HARDWARE IS 304 GRADE STAINLESS STEEL UNLESS OTHERWISE NOTED. (316 GRADE STAINLESS STEEL HARDWARE IS AVAILABLE AS AN OPTION.)</p>
<p>8. ANTI-SEIZE IS REQUIRED ON STAINLESS STEEL HARDWARE. (NOT PROVIDED BY NATURAL STRUCTURES UNLESS TOOL KIT IS PURCHASED)</p> | <div style="text-align: center;"> <input type="checkbox"/> ACCEPTED

 <input type="checkbox"/> ACCEPTED WITH COMMENT

 <input type="checkbox"/> REVISE AND RESUBMIT

 <input type="checkbox"/> REJECTED </div> <div style="display: flex; justify-content: space-between; align-items: flex-end; padding-top: 10px;"> <div>SIGNATURE _____</div> <div>DATE _____</div> </div> |
|--|---|

SPECIFICATIONS FOR PREFABRICATED WATER SLIDE

1

Natural Structures

PO Box 270
Baker City, OR 97814
Phone: (541) 523-0224
Fax (541) 523-0231

MODEL 1648M WATER SLIDE SPECIFICATIONS

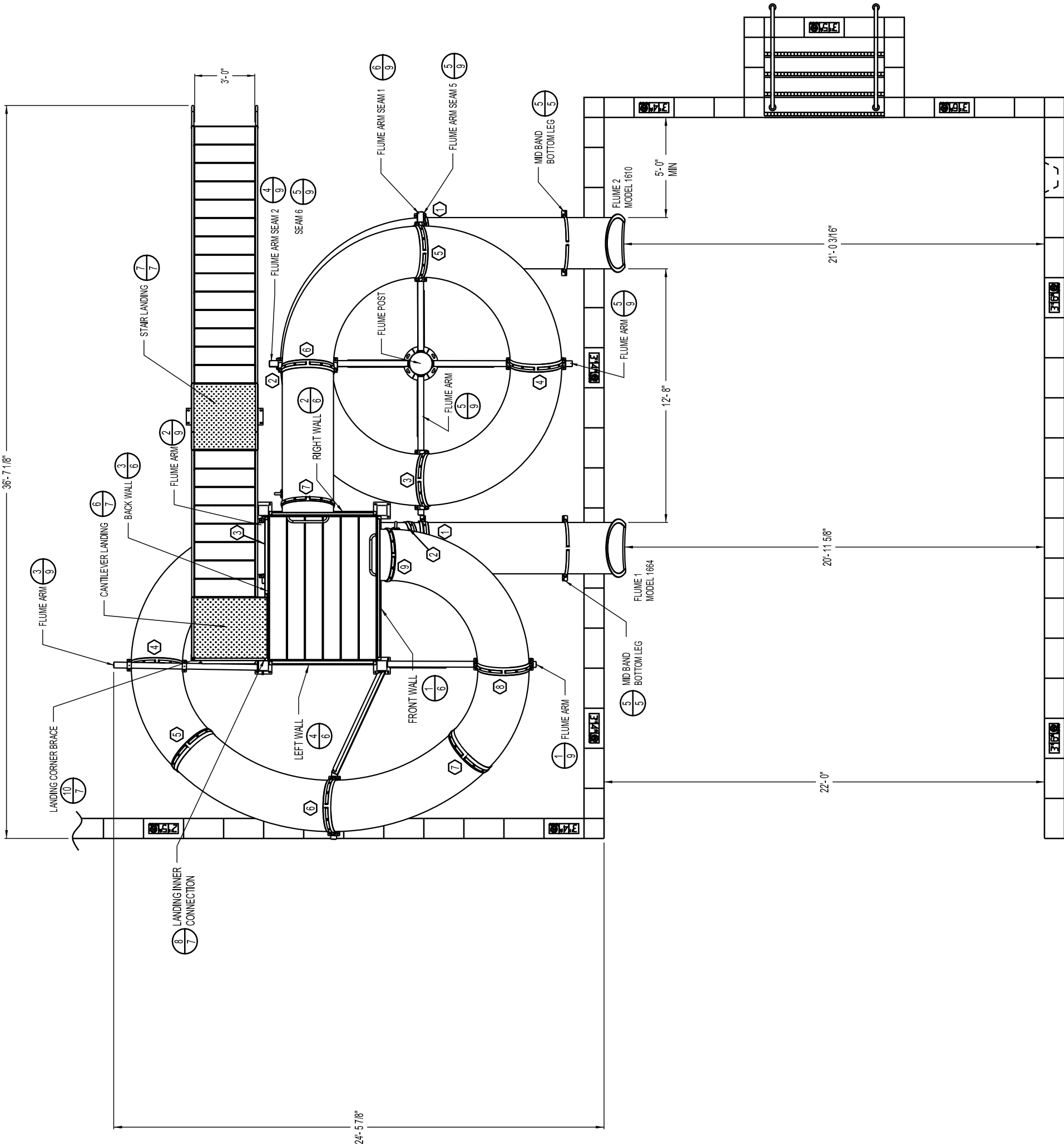
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